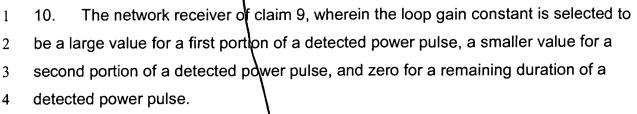
CLAIMS

What is claimed is:

- 1. A network receiver configured for receiving a modulated carrier signal from another network transceiver via a network medium, the network receiver comprising:
- a) an input amplifier for amplifying a received modulated carrier signal according to one of a plurality of amplifier gain settings and outputting an amplified carrier signal;
- b) an envelope detector configured for outputting an envelope signal in response to the amplified carrier signal;
- c) a first gain control circuit configured to select a first gain setting in response to the envelope signal, the first gain setting being optimal for receiving a pulse position modulated carrier signal;
- d) a second gain control circuit configured to select a second gain control setting in response to the envelope signal, the second gain setting being optimal for receiving a quadrature amplitude modulated signal; and
- e) selection circuitry configured to determine whether the envelope signal represents a pulse position modulated carrier or an amplitude modulated carrier and sets the amplifier gain setting to the first gain setting or a second gain setting respectively.
- 2. The network receiver of claim 1, further including an analog to digital converter generating a digital carrier signal in response to the amplified carrier signal, the envelope detector responsive to the digital carrier signal.
- 3. The network receiver of claim 2, further including a Hilbert transformer generating a digital I channel carrier signal and a digital Q channel carrier signal in response to the amplified carrier signal, the envelope detector responsive to the digital I channel carrier signal and the digital Q channel carrier signal.

- 1 4. The network receiver of claim 3, wherein the selection circuitry includes a carrier sense circuit for detecting the duration of a power pulse in the envelope signal.
- The network receiver of claim 4, wherein the selection circuitry selects the first gain setting if the duration of a power pulse is less than a duration on the order of a duration of a pulse position modulation power pulse.
 - 6. The network receiver of claim 5, wherein the selection circuitry selects the second gain setting if the duration of a power pulse is greater than a duration on the order of a duration of a pulse position modulation power pulse.
 - 7. The network receiver of claim 6, wherein the envelope signal represents the square root of the sum of the square of the I channel carrier signal and the square of the Q channel carrier signal.
 - 8. The network receiver of claim 7, wherein the first gain control circuit includes a plurality of comparators, each configured to compare the envelope signal with one of a plurality of reference signals and the first gain setting is determined by detecting saturation of at least one comparator when iteratively testing each of the plurality of gain settings.
 - 9. The network receiver of claim 8, wherein the second gain control circuit includes a logarithmic look up table generating a log signal representing the envelope signal, a comparator comparing the log signal to a reference signal to generate a difference signal, a multiplier multiplying the difference signal by a loop gain constant to generate a product, and an integrator integrating the product to generate the second gain setting.



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A method of determining a gain setting for an input amplifier generating an 11. amplified carrier signal in a receiver configured for receiving a modulated carrier signal from a network medium, the method comprising:

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generating an envelope signal from the amplified carrier signal a) representing the amplified carrier signal power;

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determining a first gain setting in response to the envelope signal, the b) first gain setting selected for receiving a pulse position modulated carrier signal;

- determining a second gain setting in response to the envelope signal, c) the second gain setting selected for receiving a quadrature amplitude modulated carrier signal;
- d) determining whether the modulated carrier signal is a pulse position modulated carrier or a quadrature amplitude modulated carrier; and
- setting the gain of the input amplifier to the first gain setting if the e) modulated carrier signal is determined to be a pulse position modulated carrier and setting the input amplifier gain to the second gain setting if the modulated carrier signal is determined to be a quadrature amplitude modulated carrier.

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12. The method of claim 11, further comprising converting the amplified carrier signal to a digital carrier signal, the envelope signal being generated from the digital carrier signal.

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The method of claim 12, further comprising generating an I channel signal and 13. a Q channel signal from the digital carrier signal, the envelope signal being generated from the I channel signal and the Q channel signal.

The method of claim 13, wherein the step of setting the gain of the input 14. 1 amplifier includes detecting the duration of a power pulse in the envelope signal. 2

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The method of claim 14, wherein the gain of the input amplifier is set to the 15. first gain setting if the duration of a power pulse is less than a duration on the order 2 of a duration of a pulse position modulation power pulse. 3

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16. The method of claim 15, wherein the gain of the input amplifier is set to the second gain setting if the duration of a power pulse is greater than a duration on the order of a duration of a pulse position modulation power pulse.

The method of claim 16, wherein the envelope signal represents the square 17. root of the sum of the square of the I channel signal and the square of the Q channel signal.

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The method of claim 17, wherein the first gain setting is determined by 18. comparing the envelope signal to a plurality of reference levels and iteratively testing each of the plurality of gain settings for saturation occurring at least one reference level to determine the first gain setting.

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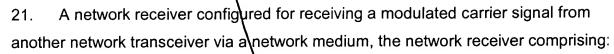
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19. The method of claim 18, wherein the second gain setting is determined by converting the envelope signal to a log signal representing the envelope signal, comparing the log signal to a reference level to determine a difference, multiplying the difference by a loop gain constant to determine a product, and integrating the product to determined the second gain setting.

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The method of claim 19, wherein the loop gain constant is selected to be a 20. 1 large value for a first portion of a detected power pulse,\a smaller value for a second 2 portion of a detected power pulse, and zero for a remaining duration of a detected 3 4 power pulse.



- a) an input amplifier for amplifying a received modulated carrier signal according to one of a plurality of amplifier gain settings and outputting an amplified carrier signal;
- b) a first gain control circuit for providing a first amplifier gain setting based on a carrier signal modulated in accordance with a first modulation method;
- c) a second gain control circuit for providing a second amplifier gain setting based on a carrier signal modulated in accordance with a second modulation method:
- d) a selection circuit for identifying whether the carrier signal is modulated in accordance with the first modulation method or the second modulation method, and for providing a gain control signal to the input amplifier in accordance therewith.
- 22. The network receiver of claim 21, wherein the selection circuit includes envelop detection circuitry for detecting the duration of a power pulse in the envelope signal.
- 23. The network receiver of claim 22, wherein the selection circuit provides a gain control signal coupling the first amplifier gain setting to the input amplifier if the duration of a power pulse is less than a duration on the order of a duration of a pulse position modulation power pulse.
- 24. The network receiver of claim 23, wherein the selection circuit provides a gain control signal coupling the second amplifier gain setting to the input amplifier if the duration of a power pulse is greater than a duration on the order of a duration of a pulse position modulation power pulse.